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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/678,107	10/06/2003	Sung Uk Moon	243563US90	1076
22850	7590	08/06/2008		
OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314			EXAMINER FOTAKIS, ARISTOCRATIS	
			ART UNIT	PAPER NUMBER
			2611	
			NOTIFICATION DATE	DELIVERY MODE
			08/06/2008	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary

Application No.

10/678,107

Applicant(s)

MOON ET AL.

Examiner

ARISTOCRATIS FOTAKIS

Art Unit

2611

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06/06/2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 - 2, 4 - 9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 - 2, 4 - 9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SF/ICE)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to

consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1 – 2 and 5 - 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Segura et al. (US 6,360,076) in view of Lauterbach et al. (US 20030162512).

Re claims 1, 2, 7, Segura discloses: a communication quality acquirer configured to acquire the communication quality (tq) from each of the plurality of mobile stations belonging to the specific multicast group (Col. 2, Lines 20-53, Fig.3). The communication quality acquirer selects the lowest communication quality (Tq-min) from among the acquired communication qualities (step 37, Fig.3); and a transmission method changer changes the transmission method in accordance with the selected lowest communication quality (step 39, Fig.3) (Col 6, Lines 12 – 67 to Col 7, Lines 1 – 25, Fig.3). However, Segura fails to disclose: a transmission method changer configured to determine a number of transmission signal repetitions by the multicast communication, in accordance with the acquired communication quality; and a transmitter configured to transmit the signal to the plurality of mobile stations using determined number of transmission signal repetitions.

Lauterbach discloses: a transmission method changer configured to determine a number of transmission signal repetitions by the multicast communication (repetition rate, [0012]), in accordance with the acquired communication quality (transfer quality,

[0012]); and a transmitter configured to transmit the signal to the plurality of mobile stations using determined number of transmission signal repetitions ([0012])

It would have been obvious to one skilled in the art at the time of invention to incorporate the transmission repetition as disclosed by Lauterbach into the invention of Segura for the benefit of increasing the probability of correct reception.

Re claim 5, Lauterbach further discloses a radio resource manager configured to manage radio resources of the radio station and wherein the transmission method changer determines the number of transmission signal repetitions in accordance with the acquired communication quality and the situation of a radio resource ([0012]).

Re claim 6, Segura further discloses the communication quality includes at least one of a received power, a signal error rate, an interference signal level and a signal-to-interference ratio (Col 5, Lines 35 - 44).

Claims 4 and 8-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Segura et al. (US 6,360,076) in view of Lauterbach et al (US 20030162512) and further in view of Miyoshi et al (US 20020123349).

Segura discloses: a communication quality acquirer configured to acquire the communication quality (tq) from each of the plurality of mobile stations belonging to the

specific multicast group, a communication quality of a signal transmitted from the radio station to each of the plurality of mobile stations (Col. 2, Lines 20-53, Fig.3).

However, Segura fails to disclose: a transmission method changer configured to determine a number of transmission signal repetitions by the multicast communication, in accordance with the acquired communication quality; and a transmitter configured to transmit the signal to the plurality of mobile stations using determined number of transmission signal repetitions. Also Segura does not specifically teach of the communication quality acquirer calculating an average value of the communication qualities acquired from the plurality of mobile stations; and the transmission method changer changing the transmission method in accordance with a difference between the calculated average value and a preset reference value.

Lauterbach discloses: a transmission method changer configured to determine a number of transmission signal repetitions by the multicast communication (repetition rate, [0012]), in accordance with the acquired communication quality (transfer quality, [0012]); and a transmitter configured to transmit the signal to the plurality of mobile stations using determined number of transmission signal repetitions ([0012]).

Miyoshi teaches of the communication quality acquirer calculating an average value of the communication qualities acquired from the plurality of mobile stations ([0212] – [0217]); and the transmission method changer changing the transmission method in accordance with a difference between the calculated average value and a preset reference value (threshold, [0214], Figs.9, 17 and 20 - 21).

It would have been obvious to one skilled in the art at the time of invention to incorporate the transmission repetition as disclosed by Lauterbach into the invention of Segura for the benefit of increasing the probability of correct reception. Miyoshi provides the method of averaging the communication qualities instead of selecting the lowest communication quality. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have used the averaging method of Miyoshi for detecting reliably whether or not downlink quality is excessive.

Response to Arguments

Applicant's arguments filed June 6, 2008 have been fully considered but they are not persuasive.

Applicants submit that Segura fails to teach or suggest that the base-station "selects the lowest communication quality from among the acquired communication qualities". Applicants further submit that Segura describes that TQmin is decreased not based on communication qualities acquired from each of the mobile stations, but instead that TQmin is arbitrarily decreased when no responses are received from the mobile stations

Examiner submits that Segura teaches of a method of determining a minimum transmission quality, TQmin, that a mobile terminal must receive for the type of data being broadcast, broadcasting a test transmission to the mobile terminals, and receiving

responses (received transmission quality) from the mobile terminals and determines whether the received transmission quality is greater or equal to TQ_{min} by following the steps 36 – 37, 41 - 43 (Fig.3) and if the received transmission quality is less than the TQ_{min} , it adjusts the received transmission quality by decreasing TQ_{min} (Col 2, Lines 18 – 54, Fig.3). Segura teaches in step 35 of his method (Fig.3), that all mobile terminals receiving the broadcast with a $tq < TQ_{max}$ start sending responses to the base station. The responses include the received tq and the mobile terminal class. At step 36, the base station receives a response with the reported tq and mobile terminal class. At step 37, it is determined whether or not the reported tq is greater than or equal to TQ_{min} . If not, the process moves to step 38 where it is determined whether or not the response timer has expired. If the response timer expires at step 38, then there were no mobile terminals which were receiving the transmission with a tq greater than or equal to TQ_{min} . Therefore, at step 39 TQ_{min} is decreased, and the process returns to step 32 and begins the test sequence again. TQ_{min} is decreased based on the communication qualities tq from each mobile station reported to the base station when a mobile station fails to have a communication quality of $tq < TQ_{min}$ and selection of the lowest communication quality (TQ_{min}) is based on the mobile station that fails the condition of $tq < TQ_{min}$ by decreasing TQ_{min} . Therefore, Segura teaches that the base-station “selects the lowest communication quality (TQ_{min}) from among the acquired communication qualities in the cellular service area.

Applicants submit that Lauterbach describes the transmission of radio broadcast signals, but fails to disclose performing multicast communication with a plurality of mobile stations which belong to a specific multicast group. Further, Applicants submit that Lauterbach does not teach or suggest determining a number of transmission signal repetitions by the multicast communication, in accordance with the acquired (lowest) communication quality.

Examiner submits that Segura teaches of a method of *broadcasting* a quality over the air *multicast* to a plurality of mobile terminals. Lauterbach teaches of a method for adjusting transmission parameters of a transmitter for digital radio signals, having the advantage that the determination of the transfer and reception quality of the digital radio signals, in particular *broadcast* signals, and the adjustment of the transmission parameters, are automated. Lauterbach further discloses (Paragraph 0012) that if a transfer is accomplished in packets, the *repetition rate* of the packets is modified depending on the *transfer quality*. The repetition rate is accordingly raised under poor conditions, so that the probability of correct reception of the packets is also increased. Under very good transfer conditions, the repetition rate can be decreased so that ultimately the net transfer rate is increased. Therefore it is proper to combine the broadcasting methods of Segura and Lauterbach where it would have been obvious to one skilled in the art at the time of invention to incorporate the transmission repetition which depend on the transfer quality as disclosed by Lauterbach into the multicast method of Segura for the benefit of increasing the probability of correct reception.

Applicants submit that Miyoshi fails to disclose that his system performs multicast communication, whatsoever, much less that his system performs multicast communication with a plurality of mobile stations belonging to the specific multicast group. Applicants further submit that the "average value of DRC values" of Miyoshi is not equivalent to the feature of "*an average value of the communication qualities acquired from the plurality of the mobile stations* belonging to the specific multicast group.". Further, DRC value in Miyoshi merely relates to an acceptable reception data rate for the communication terminal and is not a report of downlink communication quality.

Examiner submits that Segura, Lauterbach and Miyoshi teach of broadcasting methods where Segura specifically teaches of a method of *broadcasting* a quality over the air *multicast* to a plurality of mobile terminals. Miyoshi teaches of a downlink quality estimation that calculates an average value of the communication qualities (DRC values) acquired from the plurality of the mobile stations (Paragraph 0214, Lines 1 - 3).

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Aristocratis Fotakis whose telephone number is (571) 270-1206. The examiner can normally be reached on Monday - Thursday 6:30 - 4.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chieh M. Fan can be reached on (571) 272-3042. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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/Aristocratis Fotakis/

Examiner, Art Unit 2611

/Chieh M Fan/

Supervisory Patent Examiner, Art Unit 2611